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St. Mungo's College, Glasgow.

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A D D R E S S

BY

D. C. M'VAIL, M.B.,

*Professor of Clinical Medicine,*

AT

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## INTRODUCTORY ADDRESS.

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GENTLEMEN,—I have the honour to bid you welcome to this college on the first day of a new session. The work you are to be engaged in, and the manner in which you will do it, is of the greatest importance to you now, and in the near future will be of importance not only to you, but to countless numbers of your fellow men and women. You will have the lives of your patients in charge, and no human responsibility can be greater than that.

The field of medical study overlaps, in part at least, every department of scientific knowledge. Physics, chemistry, botany, and zoology you must master in their broader features and in many minute particulars.

When you have acquired a sufficient knowledge of these four preliminary and vast subjects, you will then proceed to study the structure and functions of the human body. Not much more is known of macroscopic human anatomy than was known fifty years since, but you must study it with far greater precision than until recently was required, for, since the inauguration of Aseptic Surgery by Lister, many more regions of the human body have come within the scope of operative surgery. Physiology, unlike anatomy, has advanced, and is advancing, with ever-increasing strides. Thirty years since a man would have been dull who could not have disposed of Kirke's Handbook in a fortnight, but you will find the nine months you will devote to the subject by no means too long a time for what you have to do.

When from anatomy and physiology you have learned much concerning the human body in health, you will then proceed to the great and modern science of pathology, a science that, as known to us, has been created in the lifetime of men still living. It was so recently as the time when I was a student of the Royal Infirmary that the first lectures on pathology were delivered in Glasgow by Dr. Samuel Moore, who was then pathologist to the Infirmary, and many of us who attended in the first session of his class regretted that he allowed himself to be seduced from his early love.

Pathology will teach you the essential nature of the modifications of structure and function which constitute the basis of disease. Get a firm grip of pathology, and let me tell you there is no institution in the kingdom where the opportunity of doing so is greater than in this hospital and school. At the same time that you are engaged with pathology you will also be engaged in a study of a very different kind. You will be in the class of *Materia Medica*, and you will be amazed at the number and variety of the substances that are, or have been in recent times, in use in the treatment of disease, and you will be rejoiced to learn of the certainty of their actions, and you will wonder that, with such an armamentarium of all things mineral, vegetable, and animal, the physician should ever fail, and that Dr. Steven should have any opportunity of demonstrating to you the organs and parts of any dead body.

When you have completed attendance on these four great subjects, which form the second group in your course of study, you will enter on the final subjects of your curriculum; systematic medicine and surgery in the classroom, and clinical medicine and surgery in the wards—and by the new regulations of the Medical Council, your fifth year must be entirely clinical and practical. The enormous

importance attached to clinical teaching now is in complete contrast to the perfunctory methods of by-past years. You shall not walk the hospital as men of only thirty years since did; they came and went as they pleased, and got their certificates by merely writing their names once every two months in the Infirmary Album. When I was a student here matters were improving, for Mr. Lister and Dr. Gairdner had begun their work in this hospital, and their example was already largely influencing their colleagues, and soon the general regulations in the Infirmary relating to clinical instruction were entirely recast by Mr. William McEwen, then chairman of the Committee. In your fourth year, in addition to systematic medicine and surgery, you will have Midwifery and Gynæcology and Forensic Medicine, and in your fifth year, besides ordinary work in the wards, you will have many special departments to attend.

You see, then, how vast is the field of work on which you are entering, and all of it is important, every department of it is essential. You naturally ask whether all the ever-increasing labour that is thrown on the student is producing commensurate advantage to the public. Do we know disease in all its variety better than our predecessors, and can we deal with it more successfully than they could? Most emphatically, YES.

The Royal Infirmary is now a hundred years old. When it was opened the Hunters were but recently dead, and the greatest work of the greater of these brothers, that of "Inflammation," was, as a posthumous work, not yet published. Their famous relative, Matthew Baillie, was on the eve of printing his great work on "Morbid Anatomy," the pioneer of so many books on that subject that have come since. The stethoscope was still thirty



years in the future, together with the marvellous clinical and pathological observations on pulmonary conditions by its inventor Lænnec. Mediate percussion was thirty-five years in the future. Rude forms of the microscope had been employed by a few, a very few, physiological investigators, but to hospital practice it was as foreign as the telescope. It was not until 1829 that the elder Lister made the microscope achromatic, before which time there was little accuracy in its revelations.

Lister's invention was the necessary forerunner of physiological and pathological histology, and eight years afterwards the first important contribution to the subject was made by the publication of the famous paper entitled "Contributions to Phytogenesis," by Dr. Schleiden, where for the first time was demonstrated the cell structure of plants, and the cell shown to be the ultimate rudiment of life. Next year, 1838, the second great step was taken, by the publication of Schwann's "Microscopical Researches into the Structure and Growth of Animals and Plants," in which he demonstrated that in animals also, the cell is the ultimate unit of life. The application of the cellular theory to pathology necessarily followed, and Goodsir of Edinburgh was the first to direct attention to cell alterations as constituting the fundamental phenomena of disease. Virchow followed in the lines of Goodsir's suggestions, and by the force of his perseverance and genius created for us the pathology of the present day. An early contemporary of Virchow, the late Professor Bennett of Edinburgh, did for a time brilliantly oppose the cellular theory of physiology and pathology, and proposed in opposition to it his own Molecular theory of organic structure. That did not long engage the attention of histologists, but in another form it is again forcing itself into consideration, particularly in recent observations of the changes

that occur within cells which are about to divide and multiply.

About the year 1620 Harvey had demonstrated the circulation of the blood, but until the time of the Hunters there was little further contribution to the inductive observation of the vital actions and processes in health and disease. John Hunter was the first of the modern school of physiologists and pathologists, but your predecessors could form little idea of the far-reaching consequences of John Hunter's work. Baillie, in his "Morbid Anatomy," tells all that was really known of pulmonary disease up to 1793, and all he has to say could be read in an hour, and might be remembered by reading it once. This hospital was twenty-eight years old when Lænnec was appointed to the Necker Hospital in Paris, and two years thereafter he published his immortal treatise on the "Diseases of the Chest," and for the first time, then, the students of this hospital began to be taught the broad outlines of pulmonary disease, in many respects not greatly different in their clinical aspects from the manner in which you are taught them now. In 1825 his teaching was supplemented by the discovery of mediate percussion by Piorry. From that time the advance of knowledge regarding pulmonary disease was very gradual until the development of bacteriological research, and the discovery of the tubercular bacillus by Koch and the pneumonic micrococcus by Friedlander and others.

In his book Baillie tells all that he knows about inflammation of the kidneys in nineteen lines of large type, scirrhus of the kidney he dismisses in ten lines, hydronephrosis he describes as hydatid. His whole description of the morbid anatomy and symptoms of kidney disease he is able to state in twenty octavo pages of double-ledged type. Your predecessors, therefore, could have little difficulty with their examination on renal disease. The publication

of Richard Bright's reports did not begin till 1827, and Bowman's work on the structure and use of the malpighian bodies of the kidney was not published until 1842. Baillie gathered all that was known regarding the morbid anatomy of the brain and its membranes, and the symptoms of the various diseases, as known to him during life, into a compass of less than forty widely printed pages; and even so lately as the time of Sir Thomas Watson's lectures, what was known of brain disease was of the most general and elementary character. Now, it will require a greater effort on your part to obtain a fair knowledge of diseases of the nervous system than your predecessors of even thirty years since would have been called on to make to master the whole subject of the practice of medicine. All our authorities on diseases of the nervous system have been men of the present generation—Brown-Sequard, Duchenne, Erb, Hitzig, Ferrier, Hughlings-Jackson, MacEwen, Victor Horsley, Gowers, and many others, and most of them are still alive.

Before the invention of the stethoscope little was known regarding diseases of the heart. To Lænnec, again, we owe the beginnings of our knowledge of abnormal cardiac conditions; but here he was far less successful in disclosing the secrets of disease than in the case of the lungs—indeed, his life was cut short before he had sufficient opportunity. Our cardiac knowledge is derived from many sources. We are perhaps more indebted to the treatise of Dr. James Hope, published in 1832, than to any other source, and it was a great discovery that of Peter Latham when he first demonstrated in 1826 to the students of St. Bartholomew's Hospital the connection between rheumatism and peri- and endo-carditis.

If there was one department of disease more than



another in which our predecessors might have handed down to us accurate information it was that of the contagious fevers, for they had opportunities of studying these, that, fortunately for you, are now greatly circumscribed. But when this hospital was first opened little had been done to restrict the ravages of the fevers. The Infirmary was six years in existence when Edward Jenner, in 1798, published his inquiry into the causes and effects of the *Variolæ Vaccinæ*, and a long time was to elapse before vaccination became general. In the early years of the century all great towns were hotbeds of fever, but half of the century was yet to elapse until, in 1850, Sir William Jenner finally established the difference between typhus and typhoid. The effect of isolation of contagious fevers has only been carried out effectively within the last two decades.

How vast, then, is the change, development, and expansion of our knowledge of disease since the beginning of the present century! The change amounts to a revolution. It entails vastly more work on you, but that, I am sure, you will not grudge. But here a question arises, has there been an expansion in our ability to deal with disease at all commensurate to our increased knowledge of the symptoms and pathology of morbid conditions? In surgery, beyond all dispute, the advance in operative and non-operative treatment has been immense. But in the diseases with which the physician has to cope the answer is much more doubtful. Dr. Benjamin Ward Richardson, in his lectures twelve years since to the Faculty of Physicians and Surgeons, pointed out that, while the reports of competent physicians regarding the seat and nature of the ailment in any given case would be almost identical, yet, with the exception of a very limited number of diseases, their medical prescriptions would be

greatly different; and that a physician, on seeing the prescription given to a patient by another physician, would not with any certainty be able, from the prescription merely, to state with precision the disease from which the patient suffered. It cannot be said that the time that has elapsed since Dr. Richardson lectured has altered the position; and we must still admit that treatment has not kept pace with diagnosis and pathology. But still substantial advance has been made, particularly in this, at least, that physicians now, where they do but little good, at all events do little harm.

In the first half of the present century bleeding was a panacea in the treatment of disease in every form. A physician never made a visit to his wards without ordering the application of dozens of leeches, and leeches were the least formidable of the methods of drawing blood. Every doctor carried his lancet, and every doctor performed venesection every day of his life. He bled on his first visit, and the blood drawn was kept for inspection on his return; and if it had a buffy coat, and it generally had, he bled again. He opened the vein of the arm for a general depletion, and he applied a large number of leeches over the region that he supposed to be specially affected. If he regarded leeches as insufficient, cupping was resorted to. Venesection, leeching, cupping were in continual use until after the first half of this century had passed away. Besides bleeding there was starvation, besides starvation there was mercurialisation; in almost every illness the production of salivation was reckoned necessary. At the beginning of all acute affections emetics were indispensable. Antimony was in daily use, and in such a disease as pneumonia it was continued from beginning to end. Only when the patient was given over as hope-

less were feeding and stimulation permissible. No wonder, then, that so many diseases were regarded as dangerous which we now can confidently hope to see cured.

Pneumonia in our day is generally amenable to treatment. In the early part of the century the mortality was more than 30 per cent. Homœopathy is a heresy, and yet strangely it was the results of Hahnemann's treatment of pneumonia that first awoke some of the eminent members of the profession to a knowledge of the evils of the then everyday practice of the profession; and in this country we are indebted chiefly to Bennett of Edinburgh, and Todd of London, and Graves of Dublin for our awakening and true estimation of the evil treatment of disease. Graves said, feed fevers; Bennett in effect said, feed everything; Todd in effect said, stimulate everything. In a few years the reaction was in full swing, and possibly went a little too far, particularly as regards stimulation, and to no one more than to Gairdner of Glasgow are we indebted for a moderating influence in the use of alcohol in acute disease.

We have got rid of emetics. We seldom salivate, and we do not use depressants, and the actual cautery and Corrigan's button have no longer a place in the instrument bag of the physician. But if we have ceased to do harm, how much good do we accomplish? In the meantime the wise physician gives much scope to the *vis medicatrix nature*. He gives his patient rest, he gives strength by judicious feeding and stimulation, he relieves pain, he procures sleep, where he may he lessens cough, he promotes digestion where that is necessary, and, in addition, he attempts to deal, with what success he may, with symptoms as they arise; and, as far as he can, he endeavours to restore organs to a better performance of their functions. He has an enormous



pharmacopœia of drugs at his disposal, but he is chary in his employment of it. Some of these medicinal agents he can trust, of most of them he is doubtful, and he is careful when he does employ them to do so in such a manner as will insure that at least to some extent he will be able to decide as to whether any change of condition has been due to his drug, or has come about independently of his drug, or has come about in spite of his drug. The good physician of the present day is most emphatically a student of the action of drugs. I say the good physician, for it is too much the custom so to combine drugs in prescriptions that it is impossible to decide as to the particular action of any one of them. The medical journals continually contain papers laudatory of certain substances, and particularly of new substances, in the treatment of special diseases. Every year some new drugs are brought under the notice of the profession, with a certainty of statement regarding their use which is most captivating, and every year almost as many recent remedies cease to be used by the profession. The very aptness of the profession to employ new remedies on the most slender basis of fact demonstrates the unsatisfactory condition of drug-giving as a whole.

What the profession at large has yet to study is the *natural history* of disease, the course of a disease when no drugs are used. Fortunately we now know that well, in so far as acute diseases are concerned; but we know it far less well where the course is chronic. In acute disease few drugs are given, and they are chiefly given as tonics or stimulants; but in chronic affections the physician is apt to ring the changes through a great part of the pharmacopœia. In acute diseases he trusts to the *vis medicatrix naturæ*; he rests, feeds, and stimulates his patient according to the condition of his general



strength. In chronic disease he drugs his patient, and often with results that are unsatisfactory.

And yet in many instances chronic disease differs from acute disease only as regards the *time* occupied by the processes of structure and function. Nature tends to stability of type and structure. Darwin showed that variations in animals brought about by domestication and use were apt to disappear, and to disappear rapidly, if domestication and use no longer operated. The race horse and the dray horse, so different from one another, when restored to the wilds of America, reverted to the original type of the horse, and the stripes of the zebra reappeared in the course of a few generations. Paget applied that to alterations of structure in the human body, and showed that the scar from a burn, so dissimilar in appearance and structure from the ordinary skin; the scar, which grew in size as the individual grew from childhood, yet continued to become less and less different from the skin surrounding it, and that if the individual only lived long enough the scar would entirely disappear. This truth is slow to be grasped in all its bearings and in all its possibilities by the profession at large.

Few physicians now alive deserve greater honour than Sir George Johnson. He has devoted a long life and a powerful mind to the study of diseases of the kidney, and particularly its chronic diseases, and he is now able to tell us that many forms of these chronic diseases are amenable to treatment. How general is the impression that fatty cells and casts appearing in the urine necessarily mean incurable disease of the kidney, and yet Dr. Johnson has shown that a patient may have albumen in large amount, anasarca, and dropsy, and fatty cells, and casts, even for years, and yet there is a possibility of cure. This I for myself have verified, but even now what a wealth of drugs

are employed in such cases. And how does Dr. Johnson treat the case? Merely by rest and a milk diet, and that in the firm belief that just as the race horse and dray horse of Darwin shall, in the absence of the circumstances that have produced their special features, and with sufficient time, revert to the original type, so shall the cells and tubes of the diseased kidney revert to *their* original type and structure, in the prolonged absence of the causes which brought about a departure from normal type and structure. There are alterations of structure which never revert to the normal type. Where the elements of normal structure have entirely disappeared they cannot return. These cases are incurable without drugs, they are incurable *with* drugs. Many conditions of departure from the normal type may be influenced by processes and agents from without, and it is the business of the present day physician carefully to investigate such possibilities.

For many years to come the practice of medicine must be experimental, and the more you deal with it inductively, and the less you deal with it deductively, the better. It is by observation and experiment that we have arrived at our present position, and it is only by observation and experiment that we can make further advances. In this work I hope that you will by and by take an important part. Students here have much to stimulate them to do their utmost to advance a science that so greatly concerns the welfare of mankind.

In all times the human mind has associated great deeds with the localities where those great deeds were accomplished. The spot on which we are now assembled and its neighbourhood have for many centuries been distinguished for achievements many of which have influenced the whole life of the country, and some that have profoundly

affected the whole civilised world. In the same century in which Ethelbert and Alberta were baptised by Augustine at Canterbury, a monk from Iona built within a few yards of where we are now assembled a little church, and began here to teach the new religion. His influence must have been great, for his name was handed down from generation to generation during the dark unchronicled ages which intervened between his time and the beginning of authentic Scottish history in the eleventh century. Of what took place in that interval we know little, but the lamp of truth lit by St. Mungo had never quite gone out. Whether his little church in some fashion continued to be maintained we do not know, but in the twelfth century, on or near the original site selected by him, a more enduring and more stately edifice began to arise, and remains to us still in all its matchless beauty as the crypt of the cathedral. In succeeding centuries the choir, and transepts, and nave, and spire were added; and on the present site of the Royal Infirmary the castle of the bishop was built, and all around were erected mansions for the prebendaries and other dignitaries of the cathedral. The influence of the cathedral, and the great men who served it must have been enormous; it was the centre of truth and learning and law for the West of Scotland, restraining the arbitrary actions of kings and nobles, and educating and civilizing the people; for the Church was then the most democratic institution in the world. No peasant then might become a noble, but any peasant might become a priest and scholar, might even become a bishop and cardinal. The See of Glasgow had great influence in the affairs of the kingdom. In times of peace the Bishop of Glasgow was a statesman, and often was a great officer of the crown; in times of war he was a soldier, and led his vassals against the Southern foe.



But not only was the bishopric of Glasgow a potent influence in Scotland; it also held a high place in the Catholic Church, and in 1450 the most scholarly Pope who had ever reigned in Rome, Nicholas the Fifth, the collector of the first mediæval library, that of the Vatican, empowered the Bishop of Glasgow to erect a university here. The University of Glasgow was an appanage of the See, and the bishops and archbishops in unbroken succession were chancellors of the university until the fall of the Roman Catholic Church in Scotland at the Reformation. The Cathedral since then, except as a beautiful example of early mediæval architecture, became of little more importance than any other parish church. But the university it had founded and nourished was able, although often with difficulty, to struggle on alone. It had been first housed by the bishop in a house belonging to the See, and long after known as the "auld pedagogy," which was situated in Rotten Row. A house in High Street was given by the Earl of Hamilton to the university to be used as a Collège of Arts, and some time after the Hamilton family gave a second house adjoining the first, and on the suppression of the monastery of the Black Friars a portion of the monastic buildings and grounds which adjoined the College of Arts was given to the university. On that site the university founded by the successors of St. Mungo grew in strength and usefulness for four hundred years. When Pope Nicholas granted his bull giving to Glasgow a Studium Generale on the broad lines of his own Alma Mater of Bologna, in the year in which books were first printed from moveable types, he no doubt expected that important work would be accomplished in the new seat of learning. Such anticipation has been amply fulfilled.

Three movements of world-wide influence began within



the walls of, or in direct connection with, the University of Glasgow. The first of these was the inauguration of popular scientific and technical education by Professor Anderson about 1758. He invited the mechanics of Glasgow to attend the experimental lectures in his course of natural philosophy. He admitted them without fee, and not only did he open his doors to them but he visited their workshops and specially invited them to attend; and that this work of popular scientific instruction might not come to an end with his life, he bequeathed his apparatus and library, and his money to found a college expressly for the purpose of continuing it. Anderson's College, both directly and indirectly, has more than fulfilled the expectations of its founder. Dr. Birkbeck, an early professor there, was the prime instigator of the mechanics' institutions of the country; and that the instruction in these institutions might be systematised and aided, the Society of Arts and the Government Department of Science and Art were called into existence, and that department of the Government now disburses annually the large sum of £93,000 to carry out the work that Professor Anderson began in his class-room in the old College in High Street 134 years ago. The second event of world-wide importance that occurred in the old College was the invention of the condensing steam-engine by Watt in 1765, an invention that has revolutionised the life of mankind. By steam in the United Kingdom alone, more work is now performed, than without steam could be done by the whole human race on the globe. The early development of this invention, that has placed at the disposal of man the material wealth and resources of the earth, ran on concurrently with the working out of the third great contribution of world-wide importance by a Glasgow professor—"The Wealth of Nations," by Adam Smith. Watt gave the world manufactures and

commerce: Smith laid down the principles on which these were to be regulated and worked between individual and individual, between class and class, between nation and nation. It was in the year when the first perfected engine left the Soho works of Boulton & Watt at Birmingham that Adam Smith's book was published. The coincidence was marvellous. From standpoints of thought far distant from each other, the two men laboured, but what the one did was the complement of what the other did. Their combined work began a new era in the world, and the one was mechanist to the College and the other was its Professor of Moral Philosophy. If the shade of Pope Nicholas can revisit the world he may lament the suppression of the archiepiscopal see, but certainly he will not regret the survival of his Studium Generale.

After the line of archbishops came to an end the great castle they had occupied fell gradually into decay. In its courtyards children played, and in one of them a booth was erected where the first theatrical performances in Glasgow took place. But, somewhat more than a hundred years since, the ruins were removed to make way for the erection of the Royal Infirmary. The site where, for many centuries, the spiritual wants of the community had received consideration and care was now to be devoted to the treatment of their physical infirmities. Although more lowly in station the physicians and surgeons of the Royal Infirmary have been on the whole fitting successors to the ancient bishops. At first a hospital for eighty patients, the Royal Infirmary now accommodates 586, and soon provision must be made for more. Since its foundation many thousands of students have received clinical teaching in its wards. In every county in the kingdom, in every country in the world, you can meet members of the profession who studied in the Royal Infirmary. In the century that has elapsed

since the building of the hospital its staff has contributed much to the advancement of medicine and surgery. Dr. Andrew Buchanan first demonstrated in these wards the causes of the coagulation of the blood, and first introduced the operations of plastic surgery. The late Dr. Perry did much to prepare the way for the final differentiation between typhus and typhoid by Sir William Jenner. Dr. Morton here first performed his glycero-iodine injections in Spina Bifida. Dr. MacEwen here first attempted his operations of osteotomy, his transplantation of bone, and his work in cerebral surgery. And in the Royal Infirmary Professor Lister inaugurated the methods of Aseptic surgery, the greatest contribution to surgery by far that has been made in the nineteenth century.

Gentlemen, I have in brief compass placed before you the great work that has been carried on for so many centuries in the locality in which we are met to-day, where you also for a few years are to do your work. The *genius loci* appeals to you as it has done to so many generations of scholars in the past. The old College left the classic neighbourhood of the Cathedral. St. Mungo's College takes its place. Will the new College carry on the splendid traditions of enterprise and achievement with which its site is associated? That question the future alone can answer, but the answer will to some extent depend on you.

